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Patent



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application for:

Michael H. Cohen et al.

Serial No.: 09/412,173

Filing Date: October 4, 1999

For: METHOD AND APPARATUS FOR  
OPTIMIZING A SPOKEN DIALOG  
BETWEEN A PERSON AND A  
MACHINE

Examiner: Opsasnick, M.

Group Art Unit: 2655

which is a continuation-in-part of:

Serial No.: 09/203,155

Filing Date: December 1, 1998

Assistant Commissioner for Patents  
U.S. Patent and Trademark Office  
Washington, D.C. 20231

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APPEAL BRIEF

Dear Sir:

Applicants submit, in triplicate, this Appeal Brief pursuant to 37 C.F.R. §1.192 for consideration by the Board of Patent Appeals and Interferences. Applicants submitted the Notice of Appeal on February 12, 2003. Applicants also submit herewith the fee for filing an Appeal Brief required by 37 C.F.R. §1.17(c). Please charge any additional amount due, or credit any overpayment, to deposit account 02-2666.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on

March 10, 2003

(Date of Deposit)

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### I. REAL PARTY IN INTEREST

The real party in interest of the present application is Nuance Communications of Menlo Park, California.

### II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known which will directly affect, be affected by, or have a bearing on the Board's decision in the present appeal.

### III. STATUS OF CLAIMS

Claims 24-42, 45, 46 and 50-60 are currently pending and stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent no. 6,223,559 of Balakrishnan ("Balakrishnan") in view of U.S. Patent no. 6,240,448 of Imielinski et al. ("Imielinski").

### IV. STATUS OF AMENDMENTS

No amendment was filed after the Final Office Action. A Response to Final Office Action without amendment was filed on December 2, 2002.

### V. SUMMARY OF INVENTION

The present invention relates to a system in which a centralized voice browser 10 (Fig. 1B) brokers information associated with a user between two or more speech-enabled sites (e.g., web sites 122) on a network. See Specification, pp. 33 et seq. A voice browser is a speech-enabled browser using which a user can navigate between speech-enabled sites using speech input. See, e.g., p. 13, line 15 to p. 1, line 13. The voice browser 10 facilitates sharing of the information associated with the user between

the different speech-enabled sites, to allow the speech-enabled sites to use the information to optimize spoken dialogs with the user. See, e.g., specification at p. 33, lines 13-22; p. 34, lines 7-15.

## VI. ISSUE

The issue is whether claims 24-42, 45, 46 and 50-60 are obvious under 35 U.S.C. § 103(a) based on a combination of the teachings of Balakrishnan and Imielinski.

## VII. GROUPING OF CLAIMS

The claims do not stand or fall together, because the present application includes at least six independent claims that are separately patentable, while still pertaining to the same invention. The pending independent claims are claims 24, 27, 31, 45, 50, 52, 56 and 60. As discussed further below, claims 27 and 60 may be considered to stand or fall together, and claims 52 and 56 may be considered to stand or fall together; however, the remaining independent claims (24, 31, 45, and 50), should each be considered separately, as they each recite different advantageous and patentable aspects of the invention, as further discussed in Applicants' arguments below (section "VIII").

## VIII. ARGUMENT

A. The cited combination of references fails to disclose or suggest all of the limitations of Applicants' claims.

To support an obviousness rejection, all of the limitations of an applicant's claims must be taught or suggested by the cited art. MPEP § 2143.03 (citing In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). Moreover, the claimed invention as a whole must be obvious in view of the cited art; it is not sufficient merely that individual

limitations may be separately disclosed in the prior art. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983). The present rejections fail both of these requirements.

It is useful to begin discussion with claim 24. Claim 24 recites:

24. A method of executing a spoken dialog between a user and a speech-enabled site in a network including a plurality of voice-hyperlinked speech-enabled sites, the method comprising:  
acquiring information associated with the user at a first speech-enabled site of the plurality of speech-enabled sites **during a first spoken dialog** between the user and the first speech-enabled site;  
**in response to the user initiating a voice hyperlink to access a second speech-enabled site of the plurality of speech-enabled sites, providing the information associated with the user to the second speech-enabled site; and**  
**optimizing a second spoken dialog between the user and the second speech-enabled site by applying the information associated with the user** to reduce a number of states of the second spoken dialog.  
(Emphasis added.)

The cited combination of references does not disclose or suggest all of the limitations of the claimed invention or the claimed invention as a whole. In particular, as discussed in detail below, the references do not disclose or suggest: acquiring information associated with a user during a first spoken dialog at a first speech-enabled site and, in response to the user initiating a voice hyperlink to access a second speech-enabled site, providing the information associated with the user to the second speech-enabled site, and then optimizing a second spoken dialog between the user and the second speech-enabled site by applying the information associated with the user to reduce a number of states of the second dialog.

Although Applicants' argument is directed to the proposed combination of references, it is necessary to first ascertain what the references' individual teachings are in order to determine the extent of their combined teachings.

Balakrishnan, the primary cited reference, provides little disclosure that is relevant to Applicants' claims. Balakrishnan relates to a technique for using spoken commands to control two or more applications on a computer system. See Balakrishnan's abstract, col. 4 lines 28-40. The Examiner admits that Balakrishnan does not teach using an application in a plurality of speech enabled sites (Final Office Action, p. 3). Applicant agrees. Importantly, Balakrishnan also does not even relate to performing or facilitating spoken dialogs between a user and a machine. Balakrishnan simply relates to allowing a user to control a computer with spoken commands; there is no two-way spoken interaction (i.e., spoken dialog) between the user and the machine.

Imielinski relates to a system in which hyperlinked Web pages are embedded with audio content and can be accessed by a user using a telephone keypad or spoken commands. However, in contrast with claim 24, Imielinski does not disclose or suggest acquiring information associated with a user during a first spoken dialog at one speech-enabled site and, in response to the user initiating a voice hyperlink to access another speech-enabled, providing the information associated with the user to the second speech-enabled site, and then optimizing a second spoken dialog between the user and the second speech-enabled site by applying the information associated with the user that was acquired at the first site.

Balakrishnan also does not disclose or suggest these actions that are missing from Imielinski. Therefore, no combination of Balakrishnan and Imielinski could produce or

even suggest all of the limitations of the present invention, as set forth in claim 24, nor suggest the claimed invention as a whole. Therefore, the current rejection of claim 24 and all claims which depend on it is improper and should be overturned for at least the above reasons.

Claim 27 provides:

27. A method of facilitating operation of a plurality of interconnected speech-enabled sites on a network, the method comprising:  
providing a server system on the network; and  
**operating the server system to selectively provide the speech-enabled sites with access to information about users of the speech-enabled sites.** (Emphasis added.)

Neither Balakrishnan nor Imielinski contains any disclosure or suggestion of operating a server system to selectively provide multiple speech-enabled sites with access to information about users of the speech-enabled sites, as recited in claim 27. This recited feature renders claim 27 separately patentable from claim 24. Because neither Balakrishnan nor Imielinski discloses or suggests such a feature, no combination of Balakrishnan and Imielinski could produce or even suggest all of the limitations of the present invention, as set forth in claim 27, nor suggest the claimed invention as a whole. Consequently, claim 27 and its dependent claims are patentable over the cited art.

Claim 60 recites operations similar to those of claim 27 discussed above and is therefore patentable over the cited art for similar reasons.

Claim 31 provides:

31. A method of facilitating operation of a plurality of interconnected speech-enabled sites on a network, the method comprising:

using a server system on the network to execute a browser for enabling a user to access the speech-enabled sites; and  
**using the browser to broker information associated with the user for the speech-enabled sites on the network.** (Emphasis added.)

Neither Balakrishnan nor Imielinski contains any disclosure or suggestion of using a browser in a server system to broker information associated with a user for multiple speech-enabled sites on a network. This recited feature renders claim 31 separately patentable from the other claims.

The Examiner incorrectly alleges that Imielinski teaches the brokering of information with respect to speech-enabled sites at col. 6, lines 23-52. Office Action, p. 4. The cited text contains no hint of brokering information between speech-enabled sites, and certainly contains no suggestion of brokering information associated with the user, or using a browser to do such brokering. Therefore, no combination of Balakrishnan and Imielinski could produce or even suggest all of the limitations of the present invention, as set forth in claim 31, nor suggest the claimed invention as a whole. Consequently, claim 31 and its dependent claims are allowable over the cited art.

Claim 45 provides:

45. A method of facilitating operation of a speech-enabled site on a network, the method comprising:  
receiving a request at a server system for information associated with a user, the request associated with a speech-enabled site on the network and relating to a dialog between the speech-enabled site and the user, the information maintained on a second site on the network; and  
using the server system to provide a service of the second site to the speech-enabled site, to provide the information associated with the user to the speech-enabled site.



As with the aforementioned claims, no combination of the cited references discloses or suggests such a method. In particular, the cited references fail to disclose or suggest receiving a request at a server system for information associated with a user, where the request is associated with a speech-enabled site on the network and relates to a dialog between the speech-enabled site and the user, and where the information is maintained on a second site on the network; and using the server system to provide a service of the second site to the speech-enabled site, to provide the information associated with the user to the speech-enabled site. These recited features render claim 27 separately patentable from the other claims.

Therefore, no combination of Balakrishnan and Imielinski could produce or even suggest all of the limitations of the present invention, as set forth in claim 45, nor suggest the claimed invention as a whole. Consequently, claim 45 and its dependent claims are patentable over the cited art.

Claim 50 provides:

50. (Amended) An apparatus configured to allow a user to interactively browse a telephony-based network, the apparatus comprising:  
    means for coupling a user to a first speech-enabled service at a first location on the network;  
    means for acquiring information associated with the user;  
    means for outputting **an indication audibly detectable by the user, the indication corresponding to a second speech-enabled service at second location on the network;**  
    means for detecting the user speaking an utterance matching the indication;  
    means for providing the user with access to the second speech-enabled service in response to the user speaking the utterance matching the indication; and  
    **means for providing the information associated with the user to the second speech-enabled service in response to the user speaking the utterance matching the indication, the information for use by the**

**second speech-enabled service to optimize a spoken dialog between the user and the second speech-enabled service.** (Emphasis added.)

Balakrishnan and Imielinski contain no disclosure or suggestion (either individually or in combination) of such an apparatus as a whole, and particularly, of one which includes the features highlighted above in bold. This recited feature renders claim 50 separately patentable from the other claims. Consequently, claims 50 and 51 are allowable over the cited art.

Claim 52 provides:

52. A system comprising:

a first processing system configured to execute **a speech-enabled browser**, the browser **configured to maintain information associated with a user**; and

a **second processing system** coupled on a network to the first processing system and **configured to operate as a speech-enabled site**, the second processing system **configured to**

**in response to receiving an access request from a remote user, transmit a request to the browser for the information associated with the user;**

**receive the information associated with the user in response to transmitting the request;**

**apply the information associated with the user to optimize the dialog with the user by reducing the number of required states of the dialog; and**

**execute the optimized dialog with the user.** (Emphasis added.)

Balakrishnan and Imielinski contain no disclosure or suggestion (either individually or in combination) of a system as recited in claim 52. In particular, neither Balakrishnan nor Imielinski discloses or suggests a speech-enabled browser (i.e., a “voice browser”). In Imielinski, the audio web servers may include speech to text conversion

capability to enable a user to access an audio enabled web page with spoken input.

Imielinski, col. 2, lines 49-52. However, the browser in Imielinski is not speech-enabled.

Further, in contrast with claim 52, the references also do not disclose a second processing system operating as a speech-enabled site which, in response to the user requesting access to that site, transmits a request to the speech-enabled browser for information associated with the user, and in response to receiving such information, uses the information to optimize a dialog that it executes with the user.

Therefore, no combination of Balakrishnan and Imielinski could produce or even suggest all of the limitations of the present invention, as set forth in claim 52, nor suggest the claimed invention as a whole. Consequently, claims 52 and its dependent claims are patentable over the cited art.

Claim 56 includes limitations similar to those in claim 52 discussed above and is allowable over the cited art for similar reasons along with its dependent claims.

#### Dependent Claims

A specific discussion of the dependent claims is considered unnecessary in view of the foregoing remarks.

#### B. There is no suggestion or motivation in the references to make the combination.

To support an obviousness rejection, there also must be something in the prior art to suggest the desirability, and thus the obviousness, of making the claimed combination. In re Rouffet, 149 F.3d1350, 1356 (Fed. Cir. 1998). The suggestion may not be found using hindsight gleaned from the applicant's specification. Id. at 1358.

In the present case, the only motivation offered by the Examiner for modifying the teachings of Balakrishnan based on Imielinski is: "it would advantageously allow the applications to be used in multiple user setup." Final Office Action, p. 3. That rationale is flawed. Multi-user environments have long been well-known by those skilled in the computer-related arts. Consequently, there would be no need or reason for one skilled in the art, having Balakrishnan's teachings, to look to Imielinski for the idea of a "multiple user setup", as contended by the Office. Thus, the alleged motivation to combine the teachings of Imielinski with those of Balakrishnan is without merit.

The present invention is directed to optimizing human-machine spoken dialogs (not just commands) by sharing user information between different speech-enabled sites. Neither Balakrishnan nor Imielinski even hints at this goal. Hence, there is no suggestion or motivation in these references to attempt to achieve the claimed subject matter. Therefore, the rejections should be reversed as to all pending claims for these additional reasons.

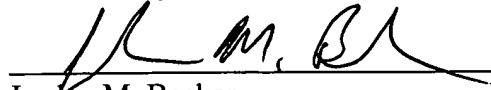
#### CONCLUSION

For the foregoing reasons, all claims are patentably distinguishable from the cited art. Reversal of the rejections of all claims is therefore respectfully requested.

Respectfully submitted,

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## IX. APPENDIX – CLAIMS ON APPEAL

Claims 1-23: Canceled.

24. (Once Amended) A method of executing a spoken dialog between a user and a speech-enabled site in a network including a plurality of voice-hyperlinked speech-enabled sites, the method comprising:

acquiring information associated with the user at a first speech-enabled site of the plurality of speech-enabled sites during a first spoken dialog between the user and the first speech-enabled site;

in response to the user initiating a voice hyperlink to access a second speech-enabled site of the plurality of speech-enabled sites, providing the information associated with the user to the second speech-enabled site; and

optimizing a second spoken dialog between the user and the second speech-enabled site by applying the information associated with the user to reduce a number of states of the second spoken dialog.

25. (Original) A method as recited in claim 24, wherein said optimizing the second spoken dialog comprises using the information associated with the user to reduce a number of items of information the user is required to speak during the spoken dialog.

26. (Original) A method as recited in claim 24, wherein said optimizing the second spoken dialog comprises using the information associated with the user to reduce the length of the second dialog.

27. (Original) A method of facilitating operation of a plurality of interconnected speech-

enabled sites on a network, the method comprising:

providing a server system on the network; and

operating the server system to selectively provide the speech-enabled sites with access to information about users of the speech-enabled sites.

28. (Original) A method as recited in claim 27, wherein the information is for use by the speech-enabled sites in executing spoken dialogs with the users.

29. (Original) A method as recited in claim 27, wherein the information is for use by the speech-enabled sites in optimizing spoken dialogs with the users.

30. (Original) A method as recited in claim 28, wherein said operating the server system to selectively provide the speech-enabled sites with access to information about users of the speech-enabled sites comprises using the server system to selectively provide the speech-enabled sites with access to information about the users, based on user profiles of the users.

31. (Twice Amended) A method of facilitating operation of a plurality of interconnected speech-enabled sites on a network, the method comprising:

using a server system on the network to execute a browser for enabling a user to access the speech-enabled sites; and

using the browser to broker information associated with the user for the speech-enabled sites on the network.

32. (Original) A method as recited in claim 31, wherein the information is for use by speech-enabled sites on the network to optimize spoken dialogs with the user.

33. (Original) A method as recited in claim 31, wherein the browser is a speech-enabled browser.

34. (Original) A method as recited in claim 31, wherein the browser is a DTMF responsive browser.

35. (Original) A method as recited in claim 31, wherein said using the server system to broker the information associated with the user comprises using the server system to selectively provide the plurality of interconnected speech-enabled sites with access to the information associated with the user.

36. (Original) A method as recited in claim 31, wherein said using the server system to broker the information associated with the user comprises using the server system to verify access to the information by executing a user verification process.

37. (Original) A method as recited in claim 31, wherein said using the server system to broker the information associated with the user comprises using the server system to verify that a particular site on the network is authorized to access the information associated with the user.

38. (Original) A method as recited in claim 31, wherein the information associated with the user is maintained at a first site on the network; wherein said using the server system to broker the information associated with the user comprises:

receiving a request for information associated with the user, the request associated with a second speech-enabled site on the network, and

in response to the request, using the server system to provide the information to the second speech-enabled site.

39. (Original) A method as recited in claim 31, wherein a first speech-enabled site on the network maintains the information associated with the user, and wherein said using the server system to broker the information associated with the user comprises:

receiving a request for information associated with the user, the request associated with a second speech-enabled site on the network; and

in response to the request, enabling the second speech-enabled site to communicate with the first speech-enabled site, such that the second speech-enabled site obtains the information associated with the user from the first speech-enabled site.

40. (Original) A method as recited in claim 31, wherein said using the server system to broker information comprises:

acquiring the information associated with the user from a first site on the network based on an interaction between the user and the first site; and

providing the information to a speech-enabled site on the network in response to the user accessing the speech-enabled site.

41. (Original) A method as recited in claim 40, wherein the information is for use by the speech-enabled sites on the network in optimizing spoken dialogs with the user.

42. (Original) A method as recited in claim 31, further comprising maintaining a look-



up service in the browser, the look-up service configured to enable the speech-enabled sites to access the information.

43. Canceled.

44. Canceled.

45. (Original) A method of facilitating operation of a speech-enabled site on a network, the method comprising:

receiving a request at a server system for information associated with a user, the request associated with a speech-enabled site on the network and relating to a dialog between the speech-enabled site and the user, the information maintained on a second site on the network; and

using the server system to provide a service of the second site to the speech-enabled site, to provide the information associated with the user to the speech-enabled site.

46. (Original) A method as recited in claim 45, wherein said using the server system comprises executing a speech-enabled browser.

47. Canceled.

48. Canceled.

49. Canceled.

50. (Original) An apparatus configured to allow a user to interactively browse a telephony-based network, the apparatus comprising:

means for coupling a user to a first speech-enabled service at a first location on the network;

means for acquiring information associated with the user;

means for outputting an indication audibly detectable by the user, the indication corresponding to a second speech-enabled service at second location on the network;

means for detecting the user speaking an utterance matching the indication;

means for coupling the originating user to the second speech-enabled service in response to the user speaking an utterance matching the audio indication; and

means for providing the information associated with the user to the second speech-enabled service in response to the user speaking an utterance matching the audio indication, the information for use by the second speech-enabled service to optimize a spoken dialog between the user and the second speech-enabled service.

51. (Original) An apparatus as recited in claim 47, further comprising means for using the information associated with the user at the second speech-enabled site to optimize a spoken dialog between the user and the second speech-enabled site.

52. (Amended) A system comprising:

a first processing system configured to execute a speech-enabled browser, the browser configured to maintain information associated with a user; and

a second processing system coupled on a network to the first processing system and configured to operate as a speech-enabled site, the second processing system

configured to

in response to receiving an access request from a remote user, transmit a request to the browser for the information associated with the user;

receive the information associated with the user in response to transmitting the request;

apply the information associated with the user to optimize a dialog with the user by reducing the number of required states of the dialog; and

execute the optimized dialog with the user.

53. (Original) A system as recited in claim 52, wherein the browser is further configured to broker the information for speech-enabled sites on the network.

54. (Original) A system as recited in claim 53, wherein the browser is configured to broker the information associated with the user by selectively providing the speech-enabled sites with access to the information associated with the user.

55. (Original) A system as recited in claim 53, wherein the browser is configured to broker the information associated with the user by verifying access to the information by executing a user verification process.

56. (Original) A system comprising:

a first processing system configured to execute a speech-enabled browser, the browser configured to maintain information associated with a user; and

a second processing system coupled on a network to the first processing system and configured to operate as a speech-enabled site, the second processing system

configured to

maintain data for executing a dialog with a user of a third processing system on the network;

receive an access request corresponding to activation of a voice hyperlink by the user;

in response to receiving the access request, transmit a request to the browser for the information associated with the user;

receive the information associated with the user in response to transmitting the request;

use the information associated with the user to optimize the dialog with the user; and

execute the optimized dialog with the user.

57. (Original) A system as recited in claim 56, wherein the first processing system is configured to broker the information for speech-enabled sites on the network.

58. (Original) A system as recited in claim 57, wherein the first processing system is configured to broker the information associated with the user by selectively providing the speech-enabled sites with access to the information associated with the user.

59. (Original) A system as recited in claim 58, wherein the first processing system is configured to broker the information associated with the user by verifying access to the information by performing a voiceprint analysis of the user.

60. (Original) A speech-enabled network comprising:

a plurality of speech-enabled sites; and

a central server coupled to the plurality of speech-enabled sites, the central server including:

a processor; and

a storage facility coupled to the processor and storing instructions which, when executed by the processor, cause the central server to selectively provide the speech-enabled sites with access to information about users of the speech-enabled sites.